IN THE CLAIMS:

The text of all pending claims, 1, 3-6, 8-11, 13 and 14, is set forth below. The status of each claim is indicated with one of (original), (currently amended), or (cancelled). Please CANCEL claims 2, 7 and 12 without prejudice or disclaimer. Please AMEND claims 1, 8 and 9 in accordance with the following:

1. (currently amended) An eccentricity compensation apparatus of a disk drive servo system having an actuator actuating a head to a position on a disk rotated by a spindle to read data on or reproduce data from the disk, the apparatus comprising:

an error detector that detects a position error between a reference head position and an actual position of the head on the disk;

a first compensation controller that receives the position error from the error detector and generates and outputs a first control value to compensate for the position error by changing the actual position of the head;

a second compensation controller that generates and outputs a second control value to compensate for eccentricity which varies depending on a phase of the spindle that rotates the disk; and

a gain/phase adjuster that adjusts gain and phase of the second control value output from the second compensation controller according to a reproduction speed of the disk,

wherein a drive signal of the actuator is obtained by summing the signals output from the first compensation controller and the gain/phase adjuster,

wherein the second compensation controller comprises a feedforward look-up table that stores control data estimated at a predetermined reproduction speed and used for compensating the eccentricity via the gain and phase adjustment, and

wherein the gain/phase adjuster compensates for gain reduction and phase lag in frequency response characteristics of the actuator based on the control data in the feedforward look-up table estimated at a predetermined reproduction speed, without updating the control data in the feedforward look-up table each time the reproduction speed changes.

2. (cancelled)

3. (original) The apparatus of claim 1, wherein the gain/phase adjuster adjusts the gain and phase of the second control value output from the second compensation controller according to the disk reproduction speed based on frequency response characteristics of the actuator.

4. (original) The apparatus of claim 1, wherein the first compensation controller comprises a phase lead-lag controller to obtain the first control value.

5. (original) The apparatus of claim 1, wherein the first compensation controller is a feedback controller that receives a reference signal and an actual signal of the actuator which corresponds to the actual position of the head, to perform a compensation control using the received signals.

6. (original) The apparatus of claim 1, wherein the position error between the reference head position and the actual position of the head on the disk corresponds to a displacement of the actuator.

7. (cancelled)

8. (currently amended) The apparatus of claim ~~7~~1, wherein the control data in the feedforward look-up table used for the compensating of the eccentricity is obtained by using:

$$U_{ff}(s) = \frac{D(s)}{G(s)},$$

wherein,

$U_{ff}(s)$ and $D(s)$ denote the control data and the eccentricity, respectively, and $G(s)$ denotes a transfer function indicating the frequency response characteristics of the actuator.

9. (currently amended) A method of eccentricity compensation of a disk drive servo system having an actuator actuating a head to a position on a disk rotated by a spindle to read data on or reproduce data from the disk, the method comprising:

detecting a position error between a reference head position and an actual position of the head on the disk;

receiving the position error, and generating and outputting a first control value to compensate for the position error by changing the actual position of the head;

generating and outputting a second control value to compensate for eccentricity which varies depending on a phase of the spindle that rotates the disk; ~~and~~

adjusting gain and phase of the second control value according to a reproduction speed of the disk, thereby obtaining a signal to drive the actuator from a summation of the first control

value and the adjusted second control value; and

compensating gain reduction and phase lag in frequency response characteristics of the actuator based on control data in a feedforward look-up table estimated at a predetermined reproduction speed, without updating the control data in the feedforward look-up table each time the reproduction speed changes.

10. (original) The method of claim 9, further comprising:

storing control data estimated at a predetermined reproduction speed and used for the compensating of the eccentricity via the gain and phase adjustment.

11. (original) The method of claim 9, wherein the adjusting of the gain and phase of the second control value according to the disk reproduction speed is based on frequency response characteristics of the actuator.

12. (cancelled)

13. (original) An eccentricity compensation apparatus of a disk drive servo system having an actuator actuating a head to a position on a disk rotated by a spindle to read data on or reproduce data from the disk, the apparatus comprising:

a controller generating and outputting a control value to compensate for eccentricity at varying reproduction speeds depending on a phase of the spindle that rotates the disk; and

a gain/phase adjuster adjusting gain and phase of the control value output from the controller at a reproduction speed of the disk based on frequency response characteristics of the actuator.

14. (original) A method of eccentricity compensation of a disk drive servo system having an actuator actuating a head to a position on a disk rotated by a spindle to read data on or reproduce data from the disk, the method comprising:

generating and outputting a control value to compensate for eccentricity at varying reproduction speeds depending on a phase of the spindle that rotates the disk; and

adjusting gain and phase of the control value at a reproduction speed of the disk based on frequency response characteristics of the actuator.